

CLAIMS

1 1. (*currently amended*) A system comprising:
2 a simulator including:
3 a virtual-failure event selector providing for selecting a virtual-
4 failure event corresponding to a real-failure event that applies to a
5 real computer cluster, and
6 a virtual-cluster generator for generating a first virtual cluster in
7 a virtual pre-failure configuration corresponding to a real pre-failure
8 configuration of said real computer cluster, and for, in response to
9 selection of said virtual-failure event, ~~for~~ generating a second virtual
10 cluster in a virtual post-failure configuration corresponding to a real
11 post-failure configuration of said real computer cluster.

1 2. (*original*) A system as recited in Claim 1 wherein, in said real
2 pre-failure configuration, said real computer cluster runs a software
3 application AC on a first computer of said real computer cluster and
4 not on a second computer of said real computer cluster, and
5 wherein, in said real post-failure configuration, said real computer
6 cluster runs said application on said second computer but not on
7 said first computer.

1 3. (*original*) A system as recited in Claim 1 further comprising
2 said real computer cluster, said real computer cluster including
3 profiling software for providing a descriptive profile of said real
4 computer cluster, said virtual-cluster generator generating said
5 virtual cluster in said pre-failure configuration using said
6 descriptive profile.

1 4. (*original*) A system as recited in Claim 3 wherein said real
2 computer cluster is connected to said simulator for providing said
3 descriptive profile thereto.

1 5. (*original*) A system as recited in Claim 2 wherein said
2 simulator further includes an evaluator for evaluating said virtual
3 cluster in its post-failure configuration.

1 6. (*original*) A system as recited in Claim 5 wherein said
2 simulator further includes a test sequencer, said test sequencer
3 selecting different virtual-failure events to be applied to said first
4 virtual cluster in said pre-failure configuration so as to result in
5 different post-failure configurations of said virtual cluster.

1 7. (*original*) A system as recited in Claim 6 wherein said
2 simulator further includes a statistical analyzer for statistically
3 analyzing evaluations of said different post-failure configurations of
4 said virtual cluster.

1 8. (*original*) A system as recited in Claim 7 wherein said test
2 sequencer automatically tests different pre-failure configurations of
3 said virtual cluster against different failure events, said statistical
4 analyzer providing a determination of optimum pre-failure
5 configuration by statistically analyzing evaluations of the resulting
6 post-failure configurations.

1 9. (*original*) A system as recited in Claim 8 wherein said
2 simulator is connected to said real computer cluster for providing
3 said determination thereto, said real computer cluster automatically
4 reconfiguring itself as a function of said determination.

1 10. *(original)* A method comprising:
2 a) generating a first virtual computer cluster in a virtual pre-
3 failure configuration that can serve as a model for a real computer
4 cluster in a pre-failure configuration that responds to
5 predetermined types of failures by reconfiguring to a real post-
6 failure configuration, said reconfiguring including migrating a real
7 application on one real computer of said real computer cluster to
8 another real computer of said real computer cluster;

9 b) selecting a sequence of at least one of said predetermined
10 types of failures; and

11 c) generating a second virtual computer cluster in a virtual post-
12 failure configuration that can serve as a model for said real
13 computer cluster in said real post--failure configuration.

1 11. *(original)* A method as recited in Claim 10 wherein steps a,
2 b, and c are iterated for different configurations of said real
3 computer cluster and for different sets of said predetermined
4 failure types, said method further comprising providing a
5 recommended configuration for said real computer cluster.

1 12. *(original)* A method as recited in Claim 10 further
2 comprising:

3 gathering profile information about said real cluster in said first
4 configuration, wherein said first virtual computer cluster is
5 generated using said profile information.

1 13. *(original)* A method as recited in Claim 12 wherein steps a,
2 b, and c are iterated for different configurations of said real
3 computer cluster and for different sets of said predetermined
4 failure types, said method further comprising providing a
5 recommended configuration for said real computer cluster.

- 1 14. *(original)* A method as recited in Claim 13 further
- 2 comprising:
- 3 transmitting said recommendation to said real computer cluster;
- 4 and
- 5 implementing said recommended configuration on said real
- 6 computer cluster.